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Geotechnical
Environmental and
Water Resources
Engineering

October 19, 2007
Project 04516-2

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GEI

Ms. Irene M. Dale
Environmental Engineer
Bureau of Waste Site Cleanup
Massachusetts Department of Environmental Protection
205B Lowell Street
Wilmington, MA 01887

RECEIVED
OCT 23 2007
DEP
NORTHEAST REGIONAL OFFICE

Dear Ms. Dale:

Re: Monthly Remedial Monitoring Report No. 5
50 Tufts Street Site
Somerville, MA
RTN 3-23246

On behalf of UniFirst Corporation (UniFirst) of Wilmington, Massachusetts, GEI Consultants, Inc. is submitting this Remedial Monitoring Report (RMR) No. 5 for the operation of Active Remedial Systems associated with 50 Tufts Street in Somerville, Massachusetts (Site), Figure 1. The Massachusetts Department of Environmental Protection (DEP) assigned Release Tracking Number (RTN) 3-23246 to the Site.

RMR No. 5 covers the monitoring period from August 1 to August 31, 2007. This RMR was prepared to meet the requirements of the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000). The original Immediate Response Action (IRA) Transmittal Forms (BWSC105, BWSC105A and BWSC105B) was submitted by eDEP, and a copy is provided in Attachment A. BWSC105 has been completed to reflect current and historic immediate response actions performed at the Site to date.

This RMR addresses remedial systems at the following locations (refer to Figure 2):

- The sub-slab depressurization system (SSDS) installed in January 2007 at the Michael E. Capuano Early Childhood Center (Center) located at 150 Glen Street.
- SSDSs installed from May through August 2007 at residential or commercial buildings at; 23 Tufts Street, 31-33 Knowlton Street, 95 Franklin Street, 95R Franklin Street, 18 Morton Street, and 103 Washington Street. The SSDS at 103 Washington Street was installed on August 29, 2007.

1. OPERATING STATUS OF ACTIVE REMEDIAL SYSTEM [310 CMR 40.0027(2)(A)]

RMR No. 5 describes monitoring associated with two Active Remedial Systems: (i) the Center SSDS; and (ii) the residential/commercial SSDSs.

1.1. Capuano Early Childhood Center

The Center SSDS was designed by GEI and installed by the T. Ford Company of Georgetown, Massachusetts. The system consists of pipes connected to a blower to draw vapors from beneath the building and discharge them through an exhaust pipe above the roof. All of the piping except the exhaust pipe is underground. The slotted pipes were installed beneath six classrooms along the southern side of the Center (Rooms 122, 126, 134, 138, 142 and 146). The blower is currently located

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in a small temporary enclosure on the southern side of the instruction wing. Six sub-slab soil gas monitoring points were installed inside in the bathrooms of Classrooms 122, 126, 133, 137, 142 and 146. Figure 3 is the Center site plan. The Center SSDS has operated without significant interruption during the monitoring period.

1.2. Residences and Commercial Buildings

The residential/commercial SSDSs were specified by GEI and installed by Storch Radon Services of Fall River, Massachusetts and Norfolk Environmental of Bridgewater, Massachusetts. The systems consist of pipes connected to a blower to draw vapors from beneath the building and discharge them through an exhaust pipe above the roof. The residential/commercial systems' blowers are located on the exterior of the building to prevent draft effects.

SSDSs are located at the following residences and commercial buildings: 23 Tufts Street, 31-33 Knowlton Street, 95 Franklin Street, 95R Franklin Street, 18 Morton Street and 103 Washington Street.

2. DATE AND NUMBER OF MONITORING EVENTS [310 CMR 40.0027(2)(B)]

2.1. Capuano Early Childhood Center

During the monitoring period, GEI conducted five monitoring events at the Center. The dates and types of monitoring events for the Center are shown in Table 1. Weekly inspection logs for the Center are included in Attachment B. Total VOC concentrations measured at the Center through August 31, 2007 are summarized in Table 2 and graphs are presented in Attachment C.

On August 13, 2007, we collected one outdoor air sample down-wind of the roof top SSDS effluent pipe and submitted the sample for chemical testing for selected chlorinated VOCs (Table 3).

2.2. Residences and Commercial Buildings

The dates and type of monitoring events at residences and commercial building between August 1 and August 31, 2007 are shown in Table 4.

2.2.1. 18 Morton Street

A SSDS was installed and then modified at 18 Morton Street between July 9 and 16, 2007. The

18 Morton Street SSDS was initially started on July 10, 2007. An indoor air sample was collected in the basement of 18 Morton Street on July 24, 2007; the results of the sampling are presented on Table 5. The owner requested that a sample not be collected on the first floor.

2.2.2. 31-33 Knowlton Street

A SSDS was installed and then modified at 31-33 Knowlton Street between June 12 and July 26, 2007. The 31-33 Knowlton Street SSDS was initially started on June 12, 2007. Indoor air samples were collected in the basement and on the first floor at 31-33 Knowlton Street on August 6, 2007; the results of the sampling are presented on Table 6.

2.2.3. 95R Franklin Street

A SSDS was installed at 95R Franklin Street between May 25 and 30, 2007 and modified on July 2, 2007. The 95R Franklin Street SSDS was initially started on May 30, 2007. Indoor air

samples were collected in the basement and on the first floor at 95R Franklin Street on August 23, 2007, the results of the sampling will be presented in RMR No. 6.

2.2.4. 103 Washington Street

A SSDS was installed at 103 Washington Street on August 24, 2007. This commercial building was monitored once after start-up to demonstrate vacuum distribution beneath the floor slab. The building at 103 Washington Street is an auto body repair shop. Indoor air samples were not collected due to the commercial nature of the building and the likely historic use of chlorinated VOCs at the property. Vacuum measurements beneath the floor slab at four locations furthest from the extraction points indicated negative pressure conditions (-0.04, -0.13, -0.13 and -0.15 inches of water column). Additional pressure measurements will be made and reported in future RMRs to demonstrate that the SSDS is functioning.

3. EFFLUENT CONCENTRATIONS [310 CMR 40.0027(2)(C)]

3.1. Capuano Early Childhood Center

The Center's SSDS influent and effluent total VOC concentrations during the monitoring period are summarized in Table 2.

3.2. Residences and Commercial Buildings

Residential and commercial building effluent concentrations were not monitored during this reporting period.

3.2.1. 95R Franklin Street

Measurement of the total VOC effluent concentrations from the SSDSs located at 95R Franklin Street is planned for October 2007.

4. IDENTIFICATION OF DISCHARGES ABOVE PERMISSIBLE DISCHARGE CONCENTRATIONS [310 CMR 40.0027(2)(D)]

The regulatory requirements for off-gas treatment for remedial air emissions are presented in

DEP's Policy No. WSC-94-150, "Off-Gas Treatment of Point-Source Remedial Air Emissions." The DEP policy states that off-gas contaminant treatment is not required for SSDSs that produce a total air emission rate of volatile contaminants of less than 100 pounds per year (lbs/yr). GEI

calculated the total VOC air emission rates for the mitigation systems, which were presented in previous RMRs submitted to DEP.

4.1. Capuano Early Childhood Center

It is our opinion that the total VOC air emission rates of the SSDS at the Center does not exceed the criteria of 100 lbs/yr and therefore, does not require off-gas treatment.

4.2. Residences and Commercial Buildings

Total VOC air emission rates were calculated at individual buildings, in accordance with procedures confirmed with DEP. The total VOC air emission rates of each individual SSDS installed at residences and the commercial building does not exceed the criteria of 100 lbs/yr and therefore, does not require off-gas treatment.

5. RECOVERY RATES AND/OR VOLUMES [310 CMR 40.0027(2)(E)]

There is no vapor, liquid or solid recovery associated with the operation of the Active Remedial Systems.

6. DISCHARGE VOLUMES [310 CMR 40.0027(2)(F)]

The volume of effluent discharged is not calculated as part of the operation of these Active Remedial Systems.

7. DATE, LOCATION, TYPE AND VOLUME OF REMEDIAL ADDITIVES APPLICATIONS [310 CMR 40.0027(2)(G)]

No remedial additives have been applied as part of these Active Remedial Systems.

8. GROUNDWATER DATA [310 CMR 40.0027(2)(H)]

No groundwater data has been collected as part of these Active Remedial Systems.

9. RELATED MAPS, GRAPHS OR DIAGRAMS [310 CMR 40.0027(2)(I)]

Related tables, maps and inspection logs are included as attachments and referenced in this report.

Please contact me at (781) 721-4012 or at igladstone@geiconsultants.com if you have any questions regarding this RMR No. 5.

Very truly yours,

GEI CONSULTANTS, INC.

Ileen S. Gladstone, P.E., LSP
Vice President

WFS/ISG:jah

Attachments:

Table 1:	Summary of Monitoring Events – Capuano Center
Table 2:	PID Monitoring Data – Capuano Center
Table 3:	Summary of Testing Results – Effluent Air Samples – Capuano Center
Table 4:	Summary of Monitoring Events – Residences
Table 5:	Summary of Testing Results – Indoor Air Samples – 18 Morton Street
Table 6:	Summary of Testing Results – Indoor Air Samples – 31-33 Knowlton Street
Figure 1:	Site Location Map
Figure 2:	50 Tufts Street Site Plan
Figure 3:	Capuano Center Site Plan
Attachment A:	BWSC105, BWSC105A and BWSC105B
Attachment B:	Weekly Mechanical Inspection Logs for Capuano Center
Attachment C:	Graphs of SSDS and Sub-Slab Total VOC Concentrations

c: John Badey, UniFirst Corporation
Peter Mills, City of Somerville

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Table 1
Summary of Monitoring Events: August 1 to August 31, 2007
Capuano Center
Somerville, Massachusetts

Monitoring Date	Monitoring Event per RMR Report Period	Type of Monitoring Event	SSDS Field Parameters Measured	Analytical Samples Collected (yes/no)?
8/6/2007	1	SSDS Weekly Mechanical Inspection	-Pressure and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes -System Flow Rate	No
8/10/2007	2	SSDS Weekly Mechanical Inspection	-Pressure and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes -System Flow Rate	No
8/13/2007	3	SSDS Effluent Sampling[7]	N/A	Yes
8/20/2007	4	SSDS Weekly Mechanical Inspection	-Pressure and VOC concentrations at each manifold pipe, the combined influent, and effluent pipes -System Flow Rate	No
8/24/2007	5	SSDS Weekly Mechanical Inspection	-Pressure and VOC concentrations at each manifold pipe and effluent pipes -System Flow Rate	No
8/30/2007	6	SSDS Diagnostic Test	-Pressure readings at interior sub-slab monitoring points, and at exterior extraction pipes -VOC readings at interior sub-slab monitoring points	No

Notes:

1. RMR = Remedial Monitoring Report.
2. SSDS = Sub-Slab Depressurization System.
3. VOCs = Volatile Organic Compounds.
4. HVAC = Heating, Ventilation, and Air Conditioning system.
5. VOC measurements collected with a ppb-RAE calibrated to 10 ppm isobutylene.
6. Pressure readings collected using a Dwyer 475-000-FM manamoter.
7. SSDS effluent sampling which was to be completed as part of July SSDS monthly monitoring.

Table 2
PID Monitoring Data: August 1 to August 31, 2007
Capuano Center
Sommerville, MA

Date	Interior Sub-Slab Monitoring Points						Blower Enclosure Monitoring Points				
	Room 122A	Room 126A	Room 133A	Room 137A	Room 142A	Room 146A	Manifold 12	Manifold 13	Manifold 14	Combined Influent	Effluent
1/31/07	440	641	469	800	412	3,400	NM	NM	NM	NM	NM
2/1/07	492,000	305,000	975,000	1,244,000	210	331,000	NM	NM	NM	NM	NM
2/2/07	1,700	6,200	4,000	2,400	11,100	47,000	0	0	1,100	2,000	1,400
2/3/07	1,328	5,468	2,081	1,328	1,743	2,213	183	652	317	1,090	785
2/4/07	746	4,750	297	652	1,255	2,565	241	436	328	528	456
2/5/07	272	1,951	1,164	1,595	1,955	1,538	213	474	412	483	472
2/6/07	613	3,563	1,299	1,967	2,412	12,100	285	4,479	787	633	669
2/7/07	NM	NM	NM	NM	NM	NM	1,715	993	1,385	738	979
2/8/07	974	3,392	933	1,399	786	4,395	118	147	153	192	180
3/1/07	NM	NM	NM	NM	NM	NM	800	1,000	1,000	800	1,000
3/8/07	417	580	441	270	151	1,176	958	425	602	534	428
3/14/07	NM	NM	NM	NM	NM	NM	22	273	111	163	86
3/22/07	NM	NM	NM	NM	NM	NM	144	0	0	0	1,058
3/29/07	NM	NM	NM	NM	NM	NM	85	0	0	0	600
4/6/07	NM	NM	NM	NM	NM	NM	21	115	70	43	41
4/27/07	195	14,000	4,145	6,150	1,250	3,725	37	169	152	151	128
5/4/07	NM	NM	NM	NM	NM	NM	330	220	280	170	200
5/11/07	NM	NM	NM	NM	NM	NM	389	57	356	245	60
5/18/07	200	10,300	430	520	420	415	40	90	83	75	50
5/25/07	NM	NM	NM	NM	NM	NM	1,150	500	560	700	681
6/1/07	NM	NM	NM	NM	NM	NM	6,150	8,000	7,565	5,413	6,122
6/8/07	NM	NM	NM	NM	NM	NM	95	103	125	35	47
6/15/07	NM	NM	NM	NM	NM	NM	153	203	236	175	190
6/22/07	NM	NM	NM	NM	NM	NM	31	106	154	93	83
7/6/07	NM	NM	NM	NM	NM	NM	1,982	468	0	0	0
7/13/07	NM	NM	NM	NM	NM	NM	28	23	36	15	0
7/30/07	800	50	90	53	0	36	191	247	267	137	171
8/6/07	NM	NM	NM	NM	NM	NM	91	277	136	192	145
8/10/07	NM	NM	NM	NM	NM	NM	0	16	26	1	0
8/20/07	NM	NM	NM	NM	NM	NM	0	0	0	0	27
8/24/07	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	110

General Notes:

1. All measurements were collected with a photoionization detector (PID), calibrated to isobutylene, and shown in parts per billion by volume (ppbv)

Qualifying Notes:

NM = Not Measured

Table 3
Summary of Testing Results - Effluent Air Samples
Capuano Center
Somerville, Massachusetts

	Sample Location:	Downwind on Roof	
	Sample Name:	150Glen-Roof	
	Sample Date:	8/13/07	
	Collected By:	GEI	
	Units:	$\mu g/m^3$	ppbv
Analyte	**Method**		
Volatile Organic Compounds (VOCs)	TO-15		
Carbon tetrachloride		0.69 J	0.11 J
1,1-Dichloroethane		< 0.81	< 0.20
1,1-Dichloroethylene		< 0.79	< 0.20
1,2-Dichloroethane		< 0.81	< 0.20
cis, 1,2-Dichloroethene		< 0.79	< 0.20
Tetrachloroethylene (PCE)		1.2 J	0.18 J
1,1,1-Trichloroethane		< 1.1	< 0.20
Trichloroethylene (TCE)		< 1.1	< 0.20

Notes

1. $\mu g/m^3$ = micrograms per cubic meter.
2. ppbv = parts per billion by volume.
3. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.
4. NT= The sample was not tested for this analyte.
5. The sample collected on August 13, 2007 is part of the July monthly sampling round. It was not collected at the same time (7/31/07) as the indoor air samples for the sampling round due to access issues.

Qualifying Notes

J The reported result is below the laboratory reporting limit and is estimated.

Table 4
Summary of Monitoring Events: August 1 to August 31, 2007
SSDSs at Residences/Commercial Buildings
Somerville, Massachusetts

Monitoring Date	Monitoring Event per RMR Report Period	Type of Monitoring Event	SSDS Field Parameters Measured	Analytical Samples Collected (yes/no)?
8/6/2007	1	Confirmatory Air Sampling at 31-33 Knowlton Street	-Ambient Air VOC concentrations	Yes
8/23/2007	2	Confirmatory Air Sampling at 95R Franklin Street	-Ambient Air VOC concentrations	Yes
8/24/2007	3	SSDS Start-Up at 103 Washington Street	-Vacuum distribution beneath the floor slab	No

Notes:

1. RMR = Remedial Monitoring Report.
2. SSDS = Sub-Slab Depressurization System.
3. VOCs = Volatile Organic Compounds.
4. HVAC = Heating, Ventilation, and Air Conditioning.
5. VOC measurements collected with a ppb-RAE calibrated to 10 ppm isobutylene.
6. Pressure readings collected using a Dwyer 475-000-FM manamoter.

Table 5
Summary of Indoor Air Testing Results
18 Morton Street
Somerville, Massachusetts

Sample Location:	**18 Morton Street**	
Sample Name:	**045162-18MORT-B**	
Sample Date:	**7/24/2007**	
Collected by:	**GEI**	
Units:	**$\mu g/m^3$**	**ppbv**
Analyte		
Volatile Organic Compounds (VOCs)		
Tetrachloroethylene (PCE)	1.4	0.20

General Notes

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. $\mu g/m^3$ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.

Table 6
Summary of Indoor Air Testing Results
31-33 Knowlton Street
Somerville, Massachusetts

Sample Location:	31-33 Knowlton Street			
Sample Name:	045162-31KNOW1		045162-31KNOWB	
Sample Date:	8/6/07		8/6/07	
Collected by:	GEI		GEI	
Units:	µg/m³	ppbv	µg/m³	ppbv
Analyte				
Volatile Organic Compounds (VOCs)				
Carbon tetrachloride	< 1.3	< 0.20	0.69 J	0.11 J

General Notes

1. Analytes detected in at least one sample are reported here. For a complete list of analytes see the attached laboratory data sheets.
2. µg/m³ = micrograms per cubic meter.
3. ppbv = parts per billion by volume.
4. "<" = The analyte was not detected at a concentration above the specified laboratory reporting limit.

Qualifying Note:

J The reported result is below the laboratory reporting limit and is estimated.

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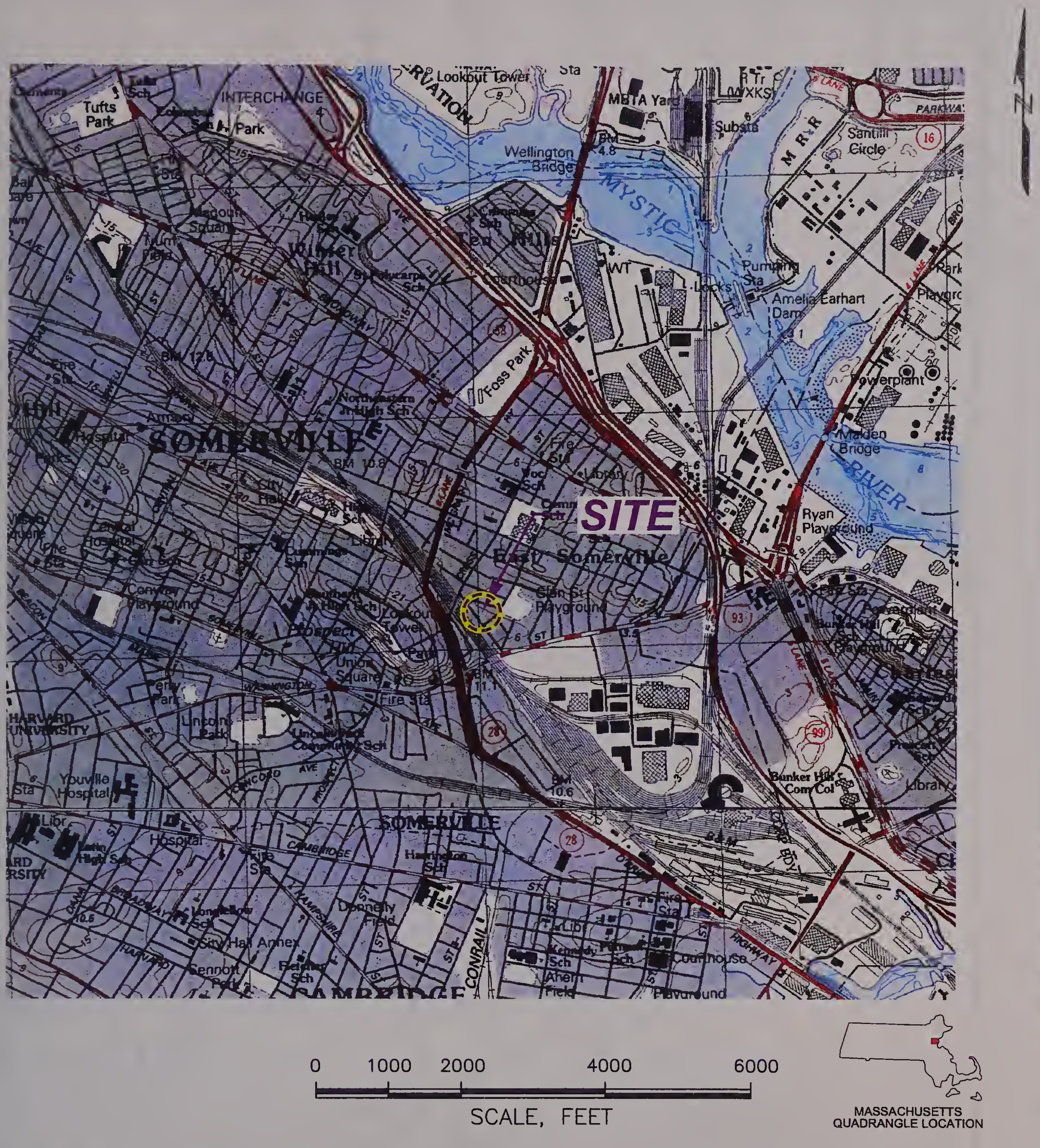

N
SITE
SOMERVILLE
East Somerville
MYSTIC RIVER
Tufts Park
Wellington Bridge
Amelia Earhart Dam
Malden Bridge
Ryan Playground
Foss Park
Union Square
Prospect Hill
Lincoln Park
Harvard University
Bunker Hill Com Col
CAMBRIDGE
CONRAIL
Santilli Circle
93
28
38
99
16
0
1000
2000
4000
6000
SCALE, FEET
MASSACHUSETTS
QUADRANGLE LOCATION

This Image provided by MassGIS is taken from
U.S.G.S. Topographic 7.5 X 15 Minute Series
Boston North, MA Quadrangle, 1985.
Datum is National Geodetic Vertical Datum (NGVD).
Contour Interval is 3 Meters.

Remedial Monitoring Report No. 5 50 Tufts Street Somerville, Massachusetts	GEI Consultants	SITE LOCATION MAP
UniFirst Corporation Wilmington, Massachusetts	Project 04516-2	October 2007 Fig. 1

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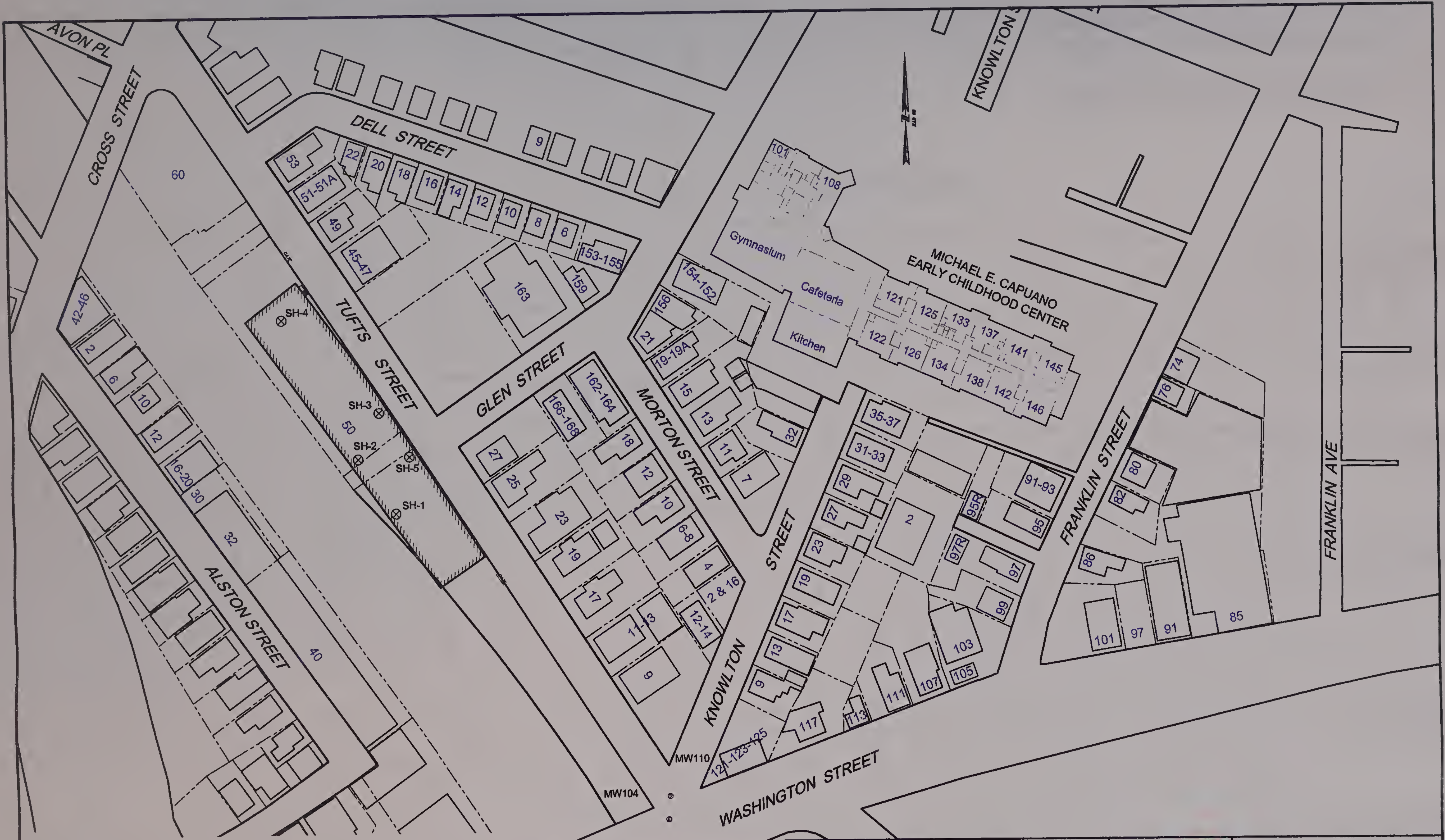
AVON PL
CROSS STREET
DELL STREET
TUFTS STREET
GLEN STREET
MORTON STREET
KNOWLTON STREET
WASHINGTON STREET
FRANKLIN STREET
FRANKLIN AVE
ALSTON STREET
MICHAEL E. CAPUANO EARLY CHILDHOOD CENTER
Gymnasium
Cafeteria
Kitchen
50
SH-1
SH-2
SH-3
SH-4
SH-5
MW104
MW110
60
40
32

0
100
200
SCALE, FEET

GENERAL NOTES:

1. BUILDINGS, STREET, AND PROPERTY LINES BASED ON SOMERVILLE ASSESSORS MAPS AND ARE BEST FIT RELATIVE TO THE LOCATION OF THE 50 TUFTS ST. BUILDING.
2. CAPUANO CENTER BUILDING IS BASED ON DRAWING A0.2 FROM THE ARCHITECTURAL BID SET OF "THE EDGERTY EARLY CHILDHOOD DEVELOPMENT CENTER" BY HMFH ARCHITECTS, INC., DATED AUGUST 10, 2001.

Remedial Monitoring Report No. 5
50 Tufts Street
Somerville, Massachusetts

UniFirst Corporation
Wilmington, Massachusetts

GEI Consultants

Project 04516-2

50 TUFTS STREET SITE

October 2007

Fig. 2

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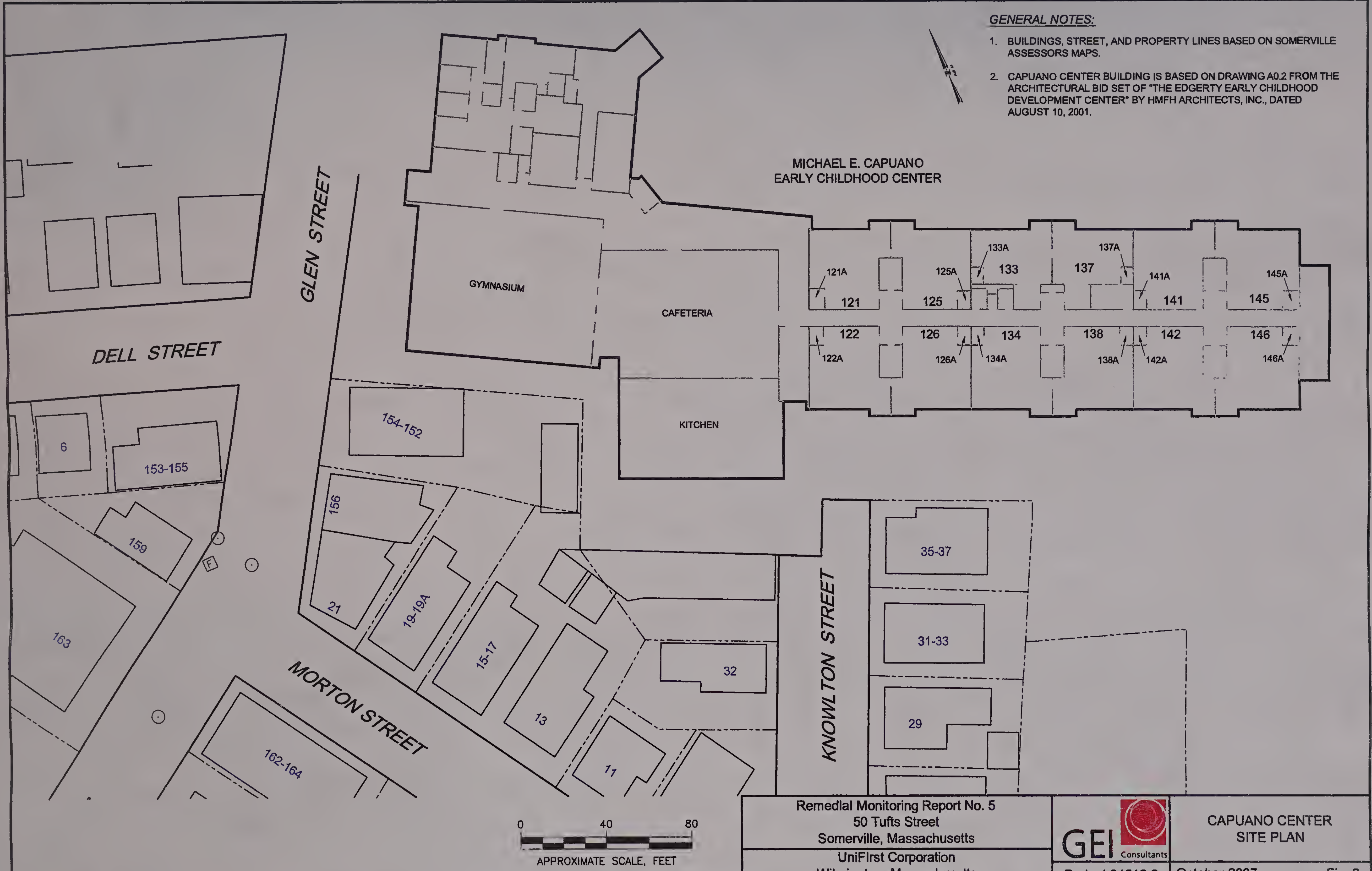
GENERAL NOTES:

1. BUILDINGS, STREET, AND PROPERTY LINES BASED ON SOMERVILLE ASSESSORS MAPS.
2. CAPUANO CENTER BUILDING IS BASED ON DRAWING A0.2 FROM THE ARCHITECTURAL BID SET OF "THE EDGERTY EARLY CHILDHOOD DEVELOPMENT CENTER" BY HMFH ARCHITECTS, INC., DATED AUGUST 10, 2001.


MICHAEL E. CAPUANO
EARLY CHILDHOOD CENTER
GYMNASIUM
CAFETERIA
KITCHEN
121A
121
125A
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133A
133
137
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145A
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126A
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134A
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138A
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142A
146
146A
GLEN STREET
DELL STREET
MORTON STREET
KNOWLTON STREET
154-152
156
21
19-19A
15-17
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31-33
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APPROXIMATE SCALE, FEET

Remedial Monitoring Report No. 5
50 Tufts Street
Somerville, Massachusetts

UniFirst Corporation
Wilmington, Massachusetts

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CAPUANO CENTER
SITE PLAN

Project 04516-2 | October 2007 | Fig. 3

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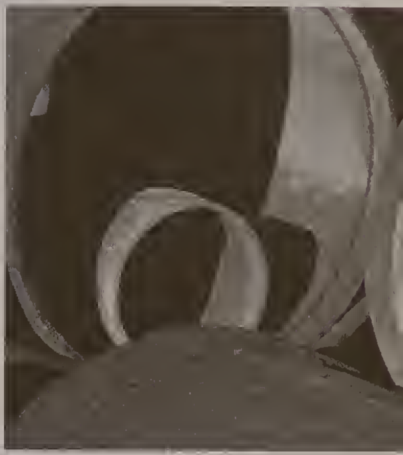

ATTACHMENT A

BWSC105, BWSC105A and BWSC105B

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number
3 - 23246

A. RELEASE OR THREAT OF RELEASE LOCATION:

1. Release Name/Location Aid: 50 TUFTS ST & PROP ACROSS THE ST

2. Street Address: 50 TUFTS ST

3. City/Town: SOMERVILLE
4. ZIP Code: 02145-4129

5. UTM Coordinates: a. UTM N: 4694322 b. UTM E: 328049

☐ 6. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.
☐ a. Tier IA ☐ b. Tier IB ☑ c. Tier IC ☐ d. Tier II

☐ 7. Check here if this location is Adequately Regulated, pursuant to 310 CMR 40.0110-0114. Specify Program (check one):
☐ a. CERCLA ☐ b. HSWA Corrective Action ☐ c. Solid Waste Management
☐ d. RCRA State Program (21C Facilities)

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial IRA Written Plan (if previously submitted): 11/13/2006 (mm/dd/yyyy)

☐ 2. Submit an **Initial IRA Plan**.

☐ 3. Submit a **Modified IRA Plan** of a previously submitted written IRA Plan.

☐ 4. Submit an **Imminent Hazard Evaluation.** (check one)
- ☐ a. An Imminent Hazard exists in connection with this Release or Threat of Release.
- ☐ b. An Imminent Hazard does not exist in connection with this Release or Threat of Release.
- ☐ c. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release, and further assessment activities will be undertaken.
- ☐ d. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release. However, response actions will address those conditions that could pose an Imminent Hazard.

☐ 5. Submit a request to **Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard**.

☐ 6. Submit an **IRA Status Report.**

☑ 7. Submit a **Remedial Monitoring Report.** (This report can only be submitted through eDEP.)

a. Type of Report: (check one) ☐ i. Initial Report ☑ ii. Interim Report ☐ iii. Final Report

b. Frequency of Submittal: (check all that apply)
- ☑ i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.
- ☑ ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.
- ☐ iii. A Remedial Monitoring Report(s) submitted concurrent with a IRA Status Report.

c. Number of Remedial Systems and/or Monitoring Programs: 2

A separate BWSC105A, IRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number
3 - 23246

B. THIS FORM IS BEING USED TO (cont.): (check all that apply)

☐ 8. Submit an **IRA Completion Statement.**

☐ a. Check here if future response actions addressing this Release or Threat of Release notification condition will be conducted as part of the Response Actions planned or ongoing at a Site that has already been Tier Classified under a different Release Tracking Number (RTN). When linking RTNs, rescoring via the NRS is required if there is a reasonable likelihood that the addition of the new RTN(s) would change the classification of the site.

b. Provide Release Tracking Number of Tier Classified Site (Primary RTN): ☐ - ☐

These additional response actions must occur according to the deadlines applicable to the Primary RTN. Use the Primary RTN when making all future submittals for the site unless specifically relating to this Immediate Response Action.

☐ 9. Submit a **Revised IRA Completion Statement.**

(All sections of this transmittal form must be filled out unless otherwise noted above)

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT IRA:

1. Identify Media Impacted and Receptors Affected: (check all that apply)

☑ a. Air ☑ b. Basement ☑ c. Critical Exposure Pathway ☑ d. Groundwater ☑ e. Residence

☐ f. Paved Surface ☐ g. Private Well ☐ h. Public Water Supply ☑ i. School ☐ j. Sediments

☐ k. Soil ☐ l. Storm Drain ☐ m. Surface Water ☐ n. Unknown ☐ o. Wetland ☐ p. Zone 2

☐ q. Others Specify: ____________________

2. Identify Oils and Hazardous Materials Released: (check all that apply)

☐ a. Oils ☑ b. Chlorinated Solvents ☐ c. Heavy Metals

☐ d. Others Specify: ____________________

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

☐ 1. Assessment and/or Monitoring Only
☐ 3. Deployment of Absorbent or Containment Materials
☐ 5. Structure Venting System
☐ 7. Product or NAPL Recovery
☐ 9. Groundwater Treatment Systems
☐ 11. Bioremediation

☐ 2. Temporary Covers or Caps
☐ 4. Temporary Water Supplies
☐ 6. Temporary Evacuation or Relocation of Residents
☐ 8. Fencing and Sign Posting
☑ 10. Soil Vapor Extraction
☐ 12. Air Sparging

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number 3 - 23246

D. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply, for volumes list cumulative amounts)

☑ 13. Excavation of Contaminated Soils

☑ a. Re-use, Recycling or Treatment

☐ i. On Site Estimated volume in cubic yards ______

☑ ii. Off Site Estimated volume in cubic yards 61

iia. Receiving Facility: STABLEX; QUEBEC CANADA Town: BOSTON State: MA

iib. Receiving Facility: ______ Town: ______ State: ______

iii. Describe: ______

☐ b. Store

☐ i. On Site Estimated volume in cubic yards ______

☐ ii. Off Site Estimated volume in cubic yards ______

iia. Receiving Facility: ______ Town: ______ State: ______

iib. Receiving Facility: ______ Town: ______ State: ______

☐ c. Landfill

☐ i. Cover Estimated volume in cubic yards ______

Receiving Facility: ______ Town: ______ State: ______

☐ ii. Disposal Estimated volume in cubic yards ______

Receiving Facility: ______ Town: ______ State: ______

☐ 14. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: ______

b. Receiving Facility: ______ Town: ______ State: ______

c. Receiving Facility: ______ Town: ______ State: ______

☑ 15. Removal of Other Contaminated Media:

a. Specify Type and Volume: SPENT GRANULAR ACTIVATED CARBON
8,000 LBS

b. Receiving Facility: RINECO Town: BENTON State: AR

c. Receiving Facility: ______ Town: ______ State: ______

☑ 16. Other Response Actions:

Describe:
TEMPORARY AIR PURIFIERS AND/OR SUB-SLAB DEPRESSURIZATION SYSTEMS

☐ 17. Use of Innovative Technologies:

Describe: ______

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IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number 3 - 23246

E. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> *if Section B of this form indicates that an* ***Immediate Response Action Plan*** *is being submitted*, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B of this form indicates that an* ***Imminent Hazard Evaluation*** *is being submitted*, this Imminent Hazard Evaluation was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and the assessment activity(ies) undertaken to support this Imminent Hazard Evaluation comply(ies) with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

> *if Section B of this form indicates that an* ***Immediate Response Action Status Report*** *and/or a* ***Remedial Monitoring Report*** *is(are) being submitted*, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B of this form indicates that an* ***Immediate Response Action Completion Statement*** *or a request to* ***Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard*** *is being submitted*, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 9719

2. First Name: ILEEN S 3. Last Name: GLADSTONE

4. Telephone: 7817214012 5. Ext.: 6. FAX:

7. Signature: ILEEN S GLADSTONE

8. Date: 10/23/2007 (mm/dd/yyyy)

9. LSP Stamp: Commonwealth of Massachusetts Licensed Site Professional

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number
3 - 23246

F. PERSON UNDERTAKING IRA:

1. Check all that apply: ☑ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: UNIFIRST CORP

3. Contact First Name: JOHN R. 4. Last Name: BADEY

5. Street: 68 JONSPIN RD 6. Title: VICE PRESIDENT

7. City/Town: WILMINGTON 8. State: MA 9. ZIP Code: 01887-0000

10. Telephone: 8003477888 11. Ext.: 12. FAX:

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING IRA:

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: OTHER PRPS

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking IRA Specify Relationship: ____

H. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if any Remediation Waste, generated as a result of this IRA, will be stored, treated, managed, recycled or reused at the site following submission of the IRA Completion Statement. If this box is checked, you must submit one of the following plans, along with the appropriate transmittal form.

☐ a. A Release Abatement Measure (RAM) Plan (BWSC106) ☐ b. Phase IV Remedy Implementation Plan (BWSC108)

☐ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

☑ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the implementation of an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.

☐ 4. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the submittal of a Completion Statement for an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.

☐ 5. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to the DEP Regional Office.

☑ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number
3 - 23246

I. CERTIFICATION OF PERSON UNDERTAKING IRA:

1. I, JOHN R. BADEY, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: JOHN R. BADEY
Signature

3. Title: VICE PRESIDENT

4. For: UNIFIRST CORP
(Name of person or entity recorded in Section F)

5. Date: 10/23/2007
(mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street: ______

8. City/Town: ______ 9. State: ______ 10. ZIP Code: ______

11. Telephone: ______ 12. Ext.: ______ 13. FAX: ______

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

Received by DEP on

10/23/2007 11:58:55 AM

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105 A

IRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number: 3 - 23246

Remedial System or Monitoring Program: 1 of: 2

A. DESCRIPTION OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM:

1. Type of Active Remedial System or Active Remedial Monitoring Program: (check all that apply)

☑ a. Active Remedial System: (check all that apply)

☐ i. NAPL Recovery ☐ ii. Soil Vapor Extraction/Bioventing ☐ iii. Vapor-phase Carbon Adsorption
☐ iv. Groundwater Recovery ☐ v. Dual/Multi-phase Extraction ☐ vi. Aqueous-phase Carbon Adsorption
☐ vii. Air Stripping ☐ viii. Sparging/Biosparging ☐ ix. Cat/Thermal Oxidation
☑ x. Other Describe: SUB-SLAB DEPRESSURIZATION SYSTEM

☐ b. Application of Remedial Additives: (check all that apply)

☐ i. To the Subsurface ☐ ii. To Groundwater (Injection) ☐ iii. To the Surface

☐ c. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section F5)

☐ i. Reactive Wall ☐ ii. Natural Attenuation ☐ iii. Other Describe:

2. Mode of Operation: (check one)

☑ a. Continuous ☐ b. Intermittent ☐ c. Pulsed ☐ d. One-time Event Only ☐ e. Other:

3. System Effluent/Discharge: (check all that apply)

☐ a. Sanitary Sewer/POTW
☐ b. Groundwater Re-infiltration/Re-injection: (check one) ☐ i. Downgradient ☐ ii. Upgradient
☑ c. Vapor-phase Discharge to Ambient Air: (check one) ☐ i. Off-gas Controls ☑ ii. No Off-gas Controls
☐ d. Drinking Water Supply
☐ e. Surface Water (including Storm Drains)
☐ f. Other Describe:

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal: From: 8/1/2007 (mm/dd/yyyy) To: 8/31/2007 (mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

☐ a. System Startup: (if applicable)

☐ i. Days 1, 3, 6, and then weekly thereafter, for the first month.
☐ ii. Other Describe:

☑ b. Post-system Startup (after first month) or Monitoring Program:

☐ i. Monthly
☐ ii. Quarterly
☑ iii. Other Describe: TOTAL VOC WEEKLY, MONTHLY INDOOR AIR

☐ 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

☐ 1. NPDES: (check one) ☐ a. Remediation General Permit ☐ b. Individual Permit
☐ c. Emergency Exclusion Effective Date of Permit: (mm/dd/yyyy)

☑ 2. MCP Performance Standard MCP Citations(s): WSC-94-150

☐ 3. DEP Approval Letter Date of Letter: (mm/dd/yyyy)

☐ 4. Other Describe:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

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IRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 1 of: 2

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

☐ 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.

a. Name:
b. Grade:
c. License No.:
d. License Exp. Date: (mm/dd/yyyy)

☐ 2. Not Required

☑ 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (check all that apply)

☑ 1. The Active Remedial System was functional one or more days during the Reporting Period.

a. Days System was Fully Functional: 31
b. GW Recovered (gals):
c. NAPL Recovered (gals):
d. GW Discharged (gals):
e. Avg. Soil Gas Recovery Rate (scfm): 109
f. Avg. Sparging Rate (scfm) :

☑ 2. Remedial Additives: (check all that apply)

☑ a. No Remedial Additives applied during the Reporting Period.

☐ b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Microorganisms:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

☐ c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Permanganates:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Persulfates:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105A

IRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 1 of: 2

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.) (check all that apply)

☐ d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

☐ e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

☐ 1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: ______ b. Total Number of Days of Unscheduled Shutdowns: ______

c. Reason(s) for Unscheduled Shutdowns: ______

☐ 2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: ______ b. Total Number of Days of Scheduled Shutdowns: ______

c. Reason(s) for Scheduled Shutdowns: ______

☐ 3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: ______ (mm/dd/yyyy)

☐ b. No Further Effluent Discharges.

☐ c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

☐ d. No Further Submittals Planned.

☐ e. Other: Describe: ______

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

☑ 1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

☑ 2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

☑ 3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

INDOOR AIR SAMPLING WAS NOT CONDUCTED IN AUGUST DUE TO ACCESS RESTRAINTS

☑ 5. Check here if additional/supporting Information, data, maps, and/or sketches are attached to the form.

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IRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number: 3 - 23246

Remedial System or Monitoring Program: 2 of: 2

A. DESCRIPTION OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM:

1. Type of Active Remedial System or Active Remedial Monitoring Program: (check all that apply)

☑ a. Active Remedial System: (check all that apply)

☐ i. NAPL Recovery ☐ ii. Soil Vapor Extraction/Bioventing ☐ iii. Vapor-phase Carbon Adsorption

☐ iv. Groundwater Recovery ☐ v. Dual/Multi-phase Extraction ☐ vi. Aqueous-phase Carbon Adsorption

☐ vii. Air Stripping ☐ viii. Sparging/Biosparging ☐ ix. Cat/Thermal Oxidation

☑ x. Other Describe: SUB-SLAB DEPRESSURIZATION SYSTEM

☐ b. Application of Remedial Additives: (check all that apply)

☐ i. To the Subsurface ☐ ii. To Groundwater (Injection) ☐ iii. To the Surface

☐ c. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section F5)

☐ i. Reactive Wall ☐ ii. Natural Attenuation ☐ iii. Other Describe: ______

2. Mode of Operation: (check one)

☑ a. Continuous ☐ b. Intermittent ☐ c. Pulsed ☐ d. One-time Event Only ☐ e. Other: ______

3. System Effluent/Discharge: (check all that apply)

☐ a. Sanitary Sewer/POTW

☐ b. Groundwater Re-infiltration/Re-injection: (check one) ☐ i. Downgradient ☐ ii. Upgradient

☑ c. Vapor-phase Discharge to Ambient Air: (check one) ☐ i. Off-gas Controls ☑ ii. No Off-gas Controls

☐ d. Drinking Water Supply

☐ e. Surface Water (including Storm Drains)

☐ f. Other Describe: ______

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal: From: 8/1/2007 (mm/dd/yyyy) To: 8/31/2007 (mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

☐ a. System Startup: (if applicable)

☐ i. Days 1, 3, 6, and then weekly thereafter, for the first month.

☐ ii. Other Describe: ______

☑ b. Post-system Startup (after first month) or Monitoring Program:

☐ i. Monthly

☐ ii. Quarterly

☑ iii. Other Describe: YEARLY

☑ 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

☐ 1. NPDES: (check one) ☐ a. Remediation General Permit ☐ b. Individual Permit

☐ c. Emergency Exclusion Effective Date of Permit: ______ (mm/dd/yyyy)

☑ 2. MCP Performance Standard MCP Citations(s): WSC-94-150

☐ 3. DEP Approval Letter Date of Letter: ______ (mm/dd/yyyy)

☐ 4. Other Describe: ______

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105 A

IRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 2 of: 2

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

☐ 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.

a. Name:
b. Grade:
c. License No.:
d. License Exp. Date: (mm/dd/yyyy)

☐ 2. Not Required

☑ 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD:
(check all that apply)

☑ 1. The Active Remedial System was functional one or more days during the Reporting Period.

a. Days System was Fully Functional: 31
b. GW Recovered (gals):
c. NAPL Recovered (gals):
d. GW Discharged (gals):
e. Avg. Soil Gas Recovery Rate (scfm): 95
f. Avg. Sparging Rate (scfm) :

☑ 2. Remedial Additives: (check all that apply)

☑ a. No Remedial Additives applied during the Reporting Period.

☐ b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Microorganisms:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

☐ c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

☐ i. Permanganates:

Name of Additive	Date	Quantity	Units

☐ ii. Peroxides:

Name of Additive	Date	Quantity	Units

☐ iii. Persulfates:

Name of Additive	Date	Quantity	Units

☐ iv. Other:

Name of Additive	Date	Quantity	Units

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

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IRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0400 (SUBPART D)

Release Tracking Number 3 - 23246

Remedial System or Monitoring Program: 2 of: 2

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.)
(check all that apply)

☐ d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

☐ e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

☐ 1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: ______ b. Total Number of Days of Unscheduled Shutdowns: ______

c. Reason(s) for Unscheduled Shutdowns: ______

☐ 2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: ______ b. Total Number of Days of Scheduled Shutdowns: ______

c. Reason(s) for Scheduled Shutdowns: ______

☐ 3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: ______ (mm/dd/yyyy)

☐ b. No Further Effluent Discharges.

☐ c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

☐ d. No Further Submittals Planned.

☐ e. Other: Describe: ______

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

☑ 1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

☑ 2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

☑ 3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

E1: SSDS AT 103 WASHINGTON STREET INSTALLED ON 8/24/07: FULLY FUNCTIONAL 7 DAYS

☑ 5. Check here if additional/supporting Information, data, maps, and/or sketches are attached to the form.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105 B

Release Tracking Number
3 - 23246

IRA REMEDIAL MONITORING REPORT
EFFLUENT/DISCHARGE CONCENTRATIONS

Pursuant to 310 CMR 40.0400 (SUBPART D)

Remedial System or Monitoring Program: 1 of: 2

For each Point of Measurement, indicate the highest concentration detected during the reporting period, of each oil, hazardous material and/or remedial additive.

Point of Measurement	Date (mm/dd/yyyy)	Contaminant, Measurement and/or Indicator Parameter	Influent Concentraion (where applicable)	Midpoint Concentration (where applicable)	(check one) ☑ Discharge ☐ Groundwater Concentration	Check here, if ND/BDL	Permissible Concentration	Units	Within Permissible Limits? (Y/N)
SSDS	08/06/2007	TOTAL VOCS	0.192		0.145	☐	28.000	ppm	Yes
SSDS	08/10/2007	TOTAL VOCS	0.001		0.000	☐	28.000	ppm	Yes
SSDS	08/20/2007	TOTAL VOCS	0.000		0.026	☐	28.000	ppm	Yes
SSDS	08/24/2007	TOTAL VOCS			0.110	☐	28.000	ppm	Yes
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
						☐			
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						☐			
						☐			
						☐			

☐ Check here if an additional BWSC105B, Effluent/Discharge Concentrations Form, is needed.

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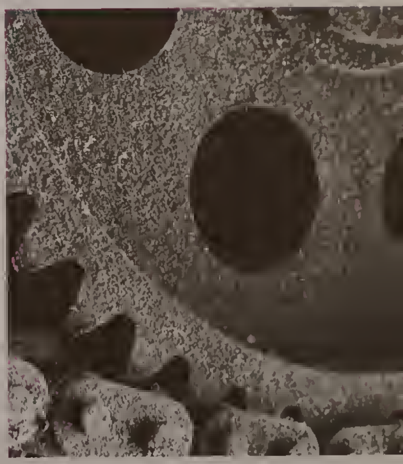

ATTACHMENT B

Weekly Mechanical Inspection Logs for Capuano Center

Weekly Mechanical Inspection Log for Capuano Center

GENERAL INFORMATION

GEI Field Representatives: T. Daigle

Date: 08/06/07

Weather: partly cloudy, 70's F

Start-time of monitoring work: 8:30

End-time of monitoring work: 9:30

System Status: ON

INSTRUMENTATION INFORMATION

nstrument	PID (ppb)	Manometer (in H_20)
Manufacturer	Pro-Rae Systems	Dwyer
Model	ppb-RAE	Mark III-475-0000 Series
GEI Identification No.	PINE	NA
Calibrant	10 ppm Isobutylene	NA
Successful Calibration	Yes	Zeroed before each reading

IELD MEASUREMENTS

Shed Secure? YES

Condensate Accumulated? NO

Condensate Drained? NA

Discharge Pressure Port

Insert Increment	Pressure (in. H20)	
0.25"	0.08	
0.5"	0.09	
1.0"	0.1	
2.0"	0.1	
	0.0925	**Average Pressure (in. H_20)**
	106	**Average Flow Rate (cfm)**

Shed Pressure/VOC Measurements

Port ID	Typical Pressure Range	Pressure	Typcial Range of VOCs	VOC (ppb)
Manifold 12	-0.300 to -0.500	-0.290	0 to 2000	91
Maniforld 13	-0.300 to -0.500	-0.600	0 to 5000	227
Manifold 14	-0.300 to -0.500	-0.280	0 to 2000	136
Combined Influent	-0.600 to -0.700	-0.550	0 to 2000	192
Effluent	0.480 to 0.600	0.560	0 to 2000	145

Comments

uring previous monitoring, we suspected that the air pump used to collect the samples may have been contaminated by other locations at the Site.
herefore, we measured ambient air collected through the pump before monitoring in case total VOC levels were elevated.
ir pump reading ~50 ppb in ambient (zero) outdoor air before monitoring began.
ir pump reading ~70 ppb in ambient outdoor air after monitoring was completed.

otes:

. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for ooms 142 and 146.

Veekly Mechanical Inspection Log for Capuano Center

ENERAL INFORMATION

EI Field Representatives: S. Slater

Start-time of monitoring work: 10:45
End-time of monitoring work: 11:45

ate: 08/10/07
Veather: rainy, 70's F

System Status: ON

ISTRUMENTATION INFORMATION

nstrument	PID (ppb)	Manometer (in H_20)
anufacturer	Pro-Rae Systems	Dwyer
odel	ppb-RAE	Mark III-475-0000 Series
EI Identification No.	PINE	NA
allbrant	10 ppm Isobutylene	NA
uccessful Calibration	Yes	Zeroed before each reading

ELD MEASUREMENTS

ned Secure? YES

ondensate Accumulated? NO

ondensate Drained? NO

Discharge Pressure Port

Insert Increment	Pressure (in. H20)	
0.25"	0.099	
0.5"	0.102	
1.0"	0.108	
2.0"	0.112	
	0.10525	**Average Pressure (in. H_20)**
	110	**Average Flow Rate (cfm)**

hed Pressure/VOC Measurements

Port ID	Typical Pressure Range	Pressure	Typcial Range of VOCs	VOC (ppb)
Manifold 12	-0.300 to -0.500	-0.293	0 to 2000	0
Maniforld 13	-0.300 to -0.500	-0.315	0 to 5000	16
Manifold 14	-0.300 to -0.500	-0.302	0 to 2000	26
Combined Influent	-0.600 to -0.700	-0.575	0 to 2000	1
Effluent	0.480 to 0.600	0.600	0 to 2000	0

omments

libration gas for the ppbRAE was leaking from the valve. Unable to calibrate.

otes:

. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for ooms 142 and 146.

Weekly Mechanical Inspection Log for Capuano Center

GENERAL INFORMATION

GEI Field Representatives:	S. Slater		
Date:	08/20/07	Start-time of monitoring work:	10:30
Weather:	sunny, 75° F	End-time of monitoring work:	10:50
		System Status:	ON

NSTRUMENTATION INFORMATION

Instrument	PID (ppb)	Manometer (in H_2O)
Manufacturer	Pro-Rae Systems	Dwyer
Model	ppb-RAE	Mark III-475-0000 Series
GEI Identification No.	PINE	NA
Calibrant	10 ppm Isobutylene	NA
Successful Calibration	Yes	Zeroed before each reading

IELD MEASUREMENTS

Shed Secure? YES

Condensate Accumulated? NO

Condensate Drained? NA

Discharge Pressure Port

Insert Increment	Pressure (in. H20)	
0.25"	0.09	
0.5"	0.1	
1.0"	0.11	
2.0"	0.1	
	0.1	**Average Pressure (in. H_2O)**
	110	**Average Flow Rate (cfm)**

Shed Pressure/VOC Measurements

Port ID	Typical Pressure Range	Pressure	Typcial Range of VOCs	VOC (ppb)
Manifold 12	-0.300 to -0.500	-0.300	0 to 2000	0
Maniforld 13	-0.300 to -0.500	-0.310	0 to 5000	0
Manifold 14	-0.300 to -0.500	-0.300	0 to 2000	0
Combined Influent	-0.600 to -0.700	-0.580	0 to 2000	0
Effluent	0.480 to 0.600	0.58 to 0.62	0 to 2000	26

Comments

he manometer used for these measurments was only accurate to two decimal places.

otes:

1. Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for rooms 142 and 146.

eekly Mechanical Inspection Log for Capuano Center

ENERAL INFORMATION

El Field Representatives: B. Simmons

ate: 08/24/07

eather:

Start-time of monitoring work: 12:30

End-time of monitoring work:

System Status: ON

STRUMENTATION INFORMATION

strument	PID (ppb)	Manometer (in H_20)
anufacturer	Pro-Rae Systems	Dwyer
odel	ppb-RAE	Mark III-475-0000 Series
El Identification No.	PINE	NA
alibrant	10 ppm Isobutylene	NA
uccessful Calibration	Yes	Zeroed before each reading

ELD MEASUREMENTS

ed Secure? YES

ondensate Accumulated? NO

ondensate Drained? NA

Discharge Pressure Port

Insert Increment	Pressure (in. H20)	Velocity XXX Meter Thermoanonemeter
0.25"		
0.5"	N/A	
1.0"		
2.0"		
Average Pressure (in. H_20)		
Average Flow Rate (cfm)		125 cfm
Velocity		1,462 ft/min 4" pipe

hed Pressure/VOC Measurements

Port ID	Typical Pressure Range	Pressure	Typcial Range of VOCs	VOC (ppb)
Manifold 12	-0.300 to -0.500	-0.35	0 to 2000	
Maniforld 13	-0.300 to -0.500	-0.34	0 to 5000	
Manifold 14	-0.300 to -0.500	-0.36	0 to 2000	
Combined Influent	-0.600 to -0.700	-0.63	0 to 2000	
Effluent	0.480 to 0.600	-0.561	0 to 2000	110

omments

C readings not measured at manifolds 12-14 and combined influent.

w rate determined using a thermoanonemeter.

tes:

Manifold 12 is the manifold pipe for rooms 122 and 126. Manifold 13 is the manifold pipe for rooms 134 and 138. Manifold 14 is the manifold pipe for oms 142 and 146.

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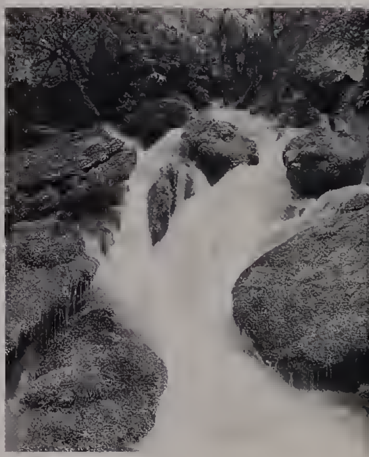
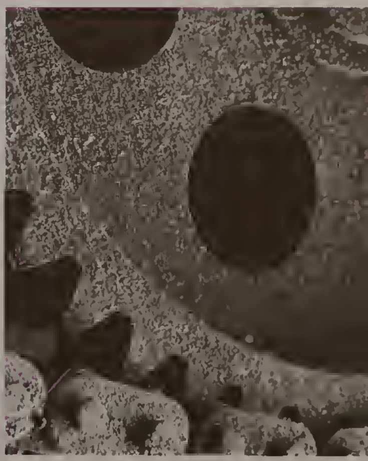


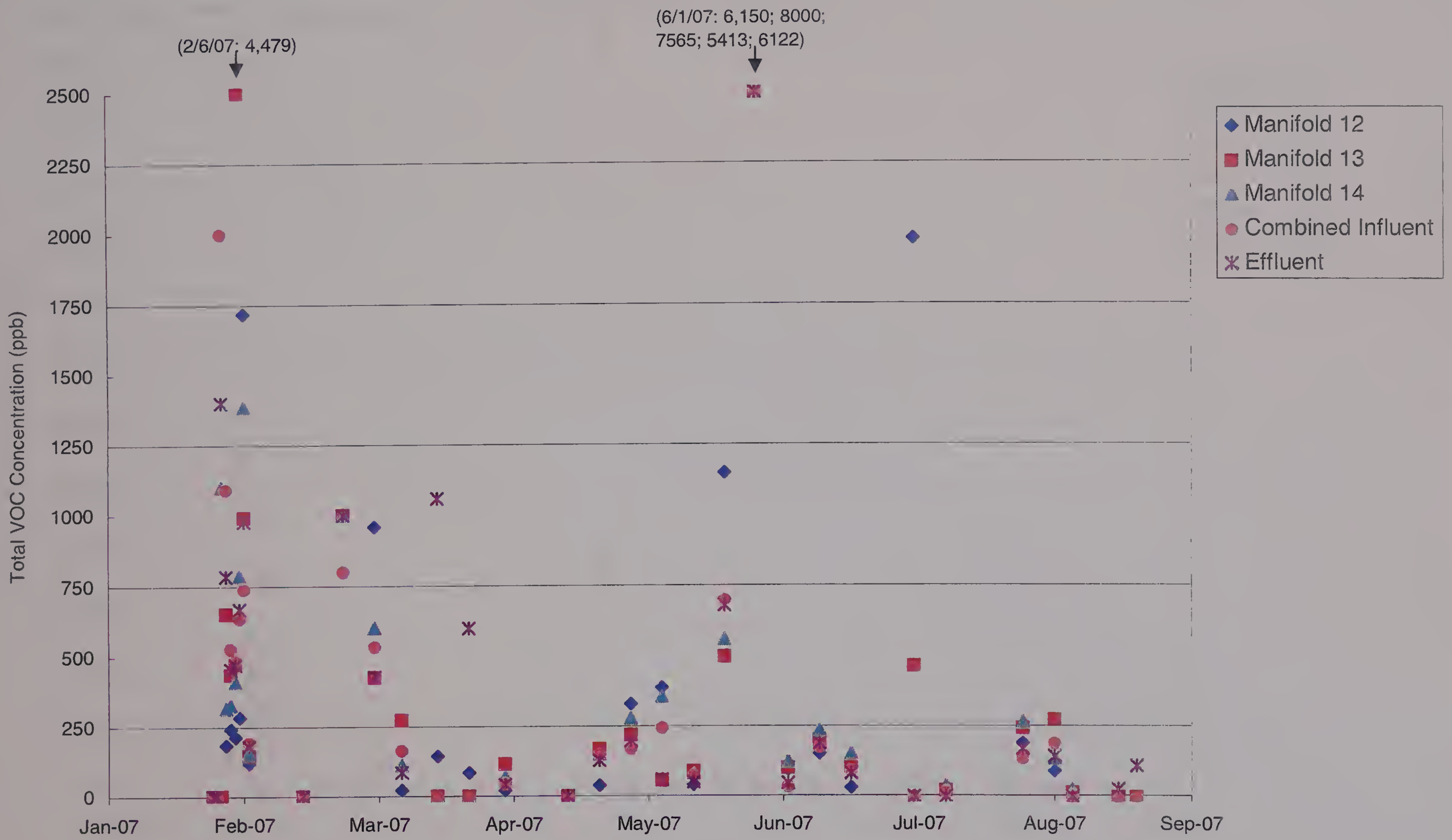


ATTACHMENT C

Graphs of SSDS and Sub-Slab Total VOC Concentrations

Gr 1

Sub-Slab PID Monitoring Data: January 31, 2007 - August 31, 2007
Total VOC Concentrations by PID at Blower Enclosure Monitoring Points
Capuano Center
Somerville, MA



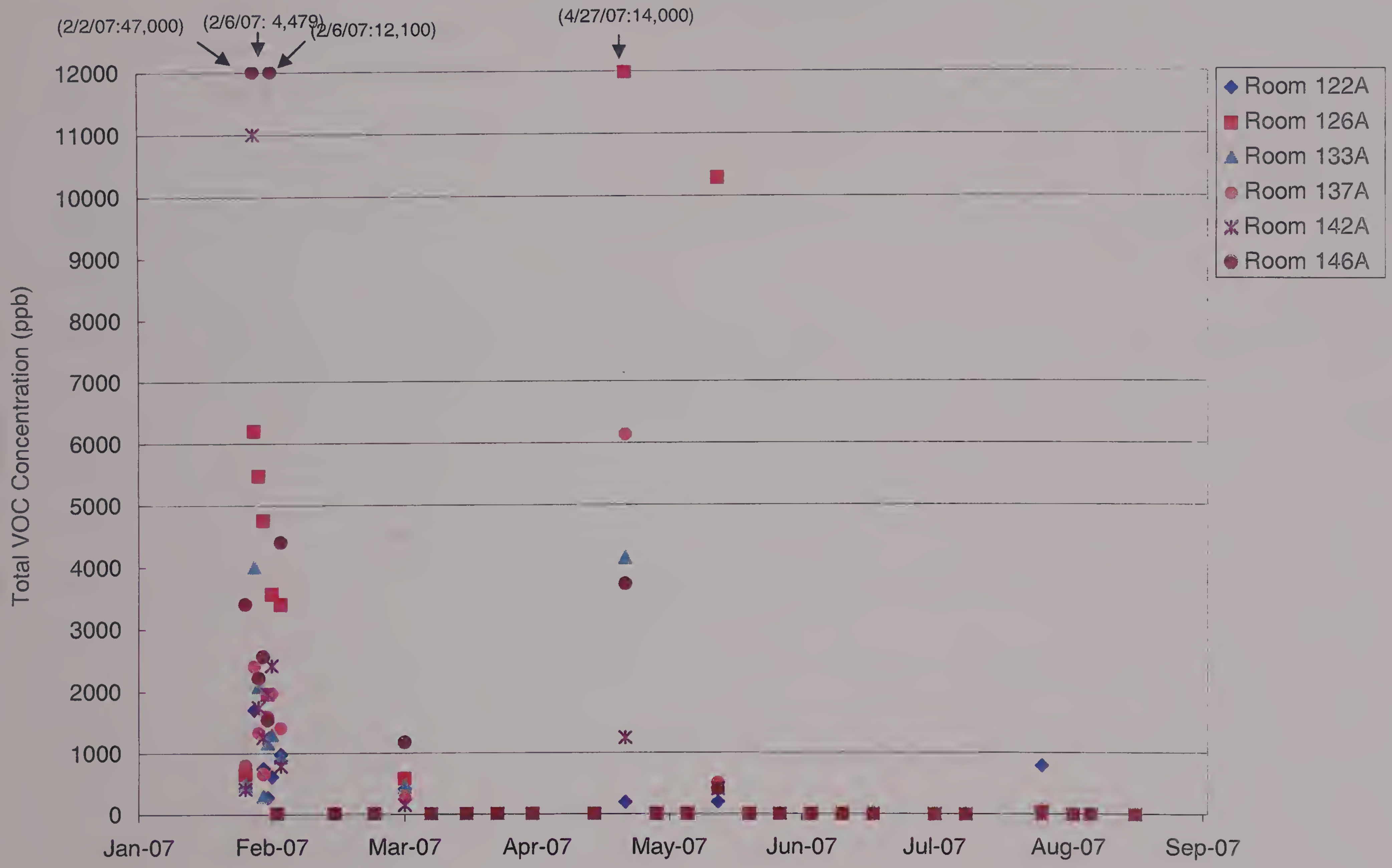
Gr 2

PID Monitoring Data: January 31, 2007 - August 31, 2007

Total VOC Concentrations by PID at Blower Interior Sub-Slab Monitoring Points

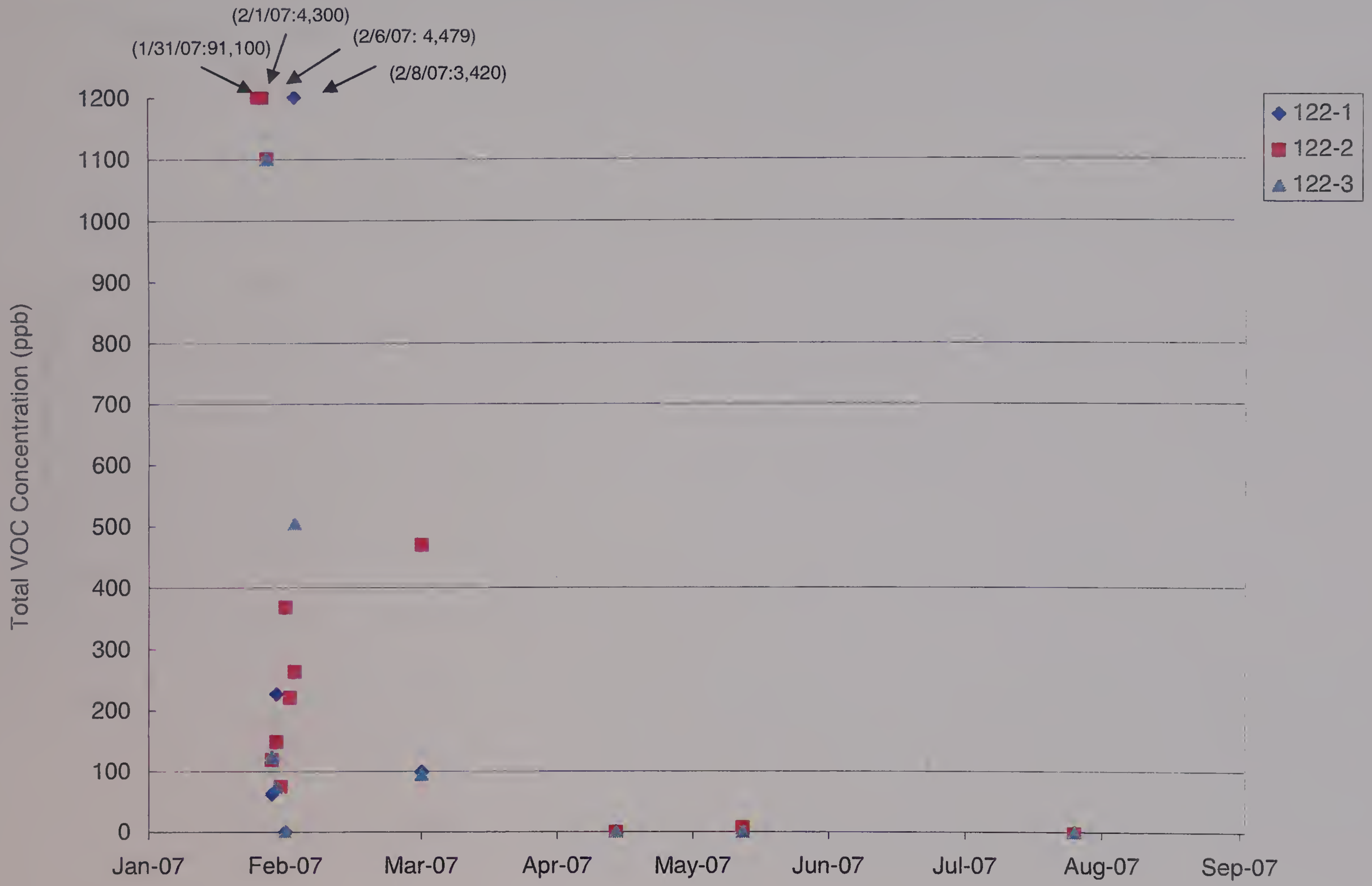
Capuano Center

Somerville, MA



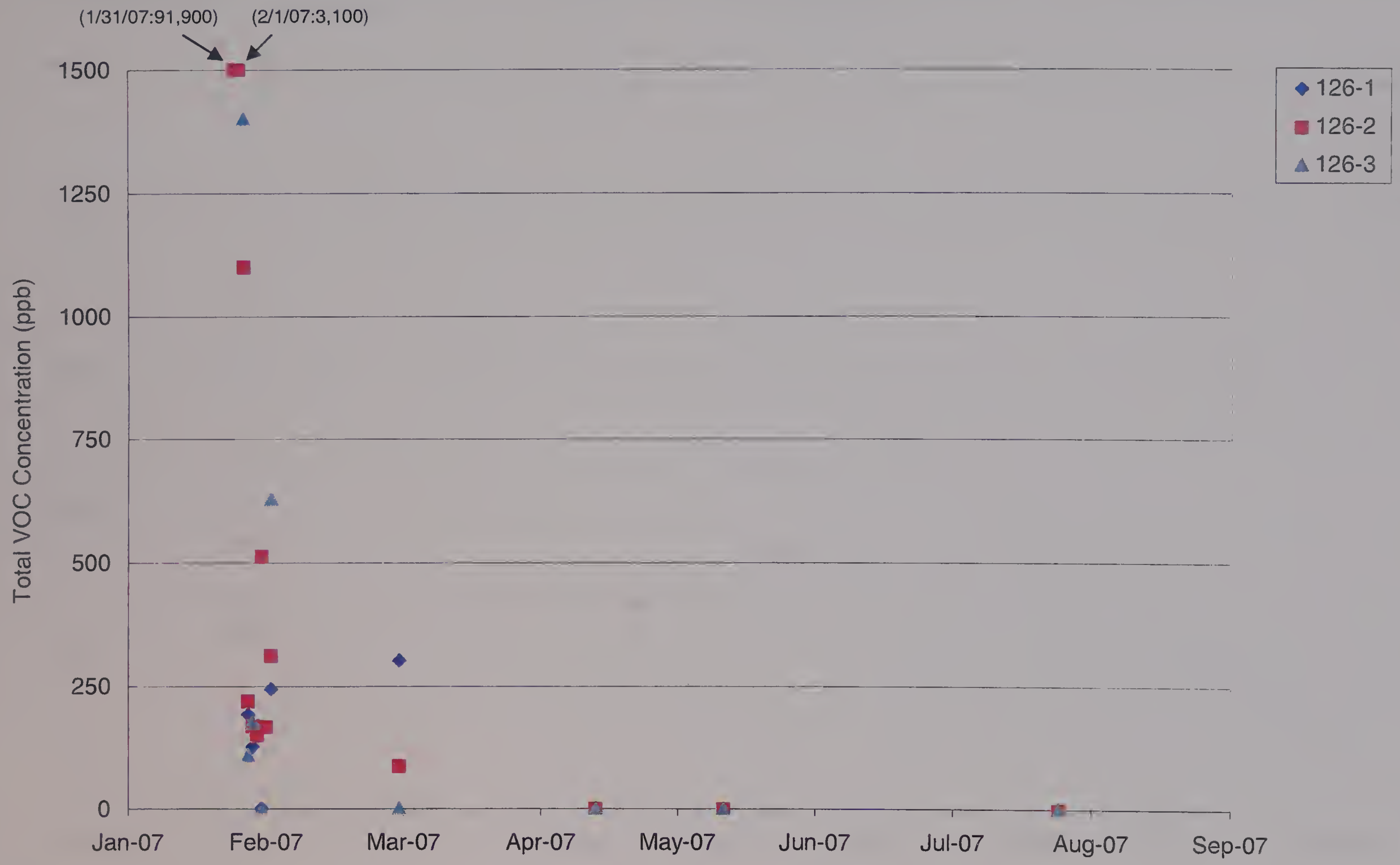
Graph 3

PID Monitoring Data: January 31, 2007 - August 31, 2007
Total VOC Concentrations by PID at Exterior Monitoring Points - Room 122
Capuano Center
Somerville, MA



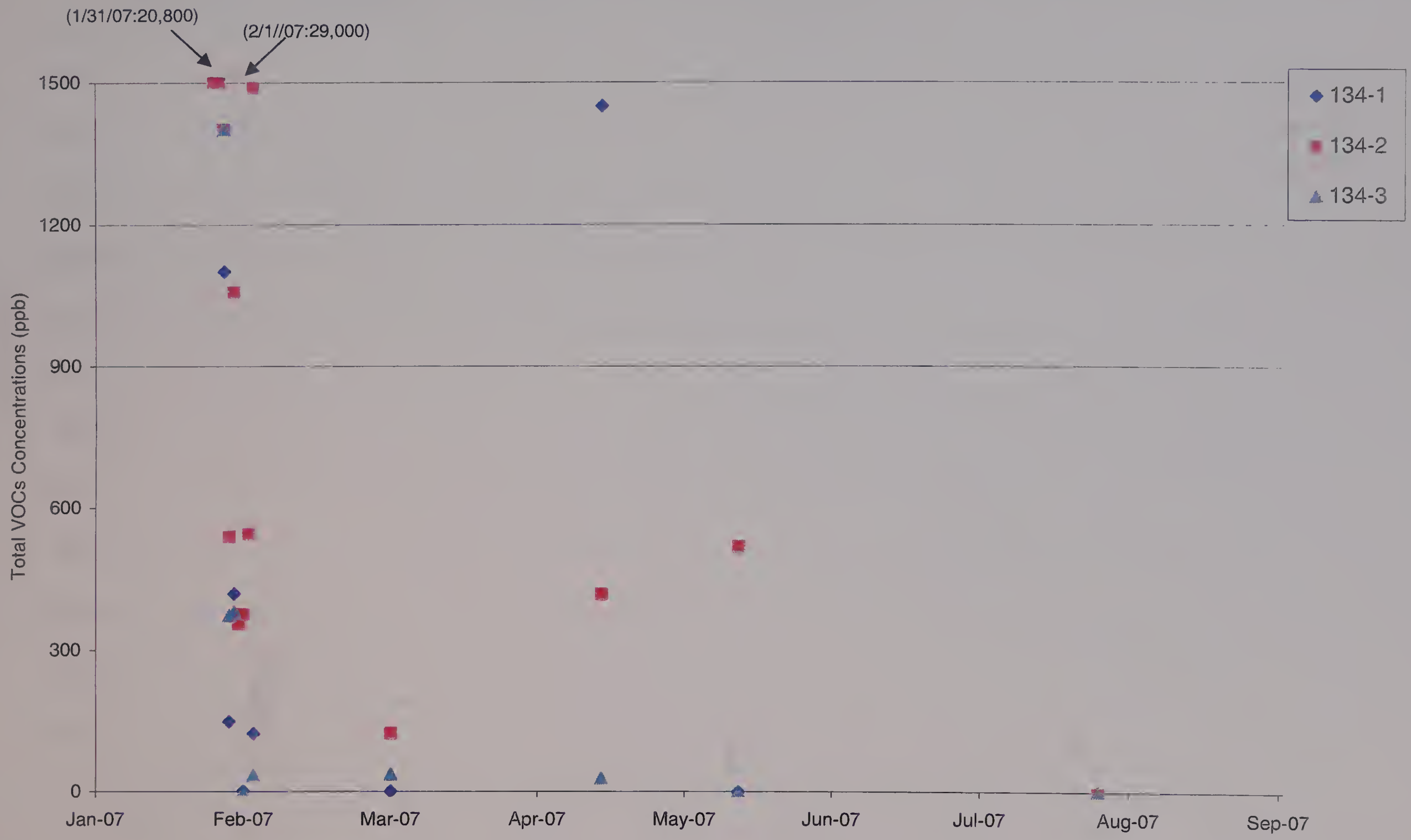
Graph 4

PID Monitoring Data: January 31, 2007 - August 31, 2007
Total VOC Concentrations by PID at Exterior Monitoring Points - Room 126
Capuano Center
Somerville, MA

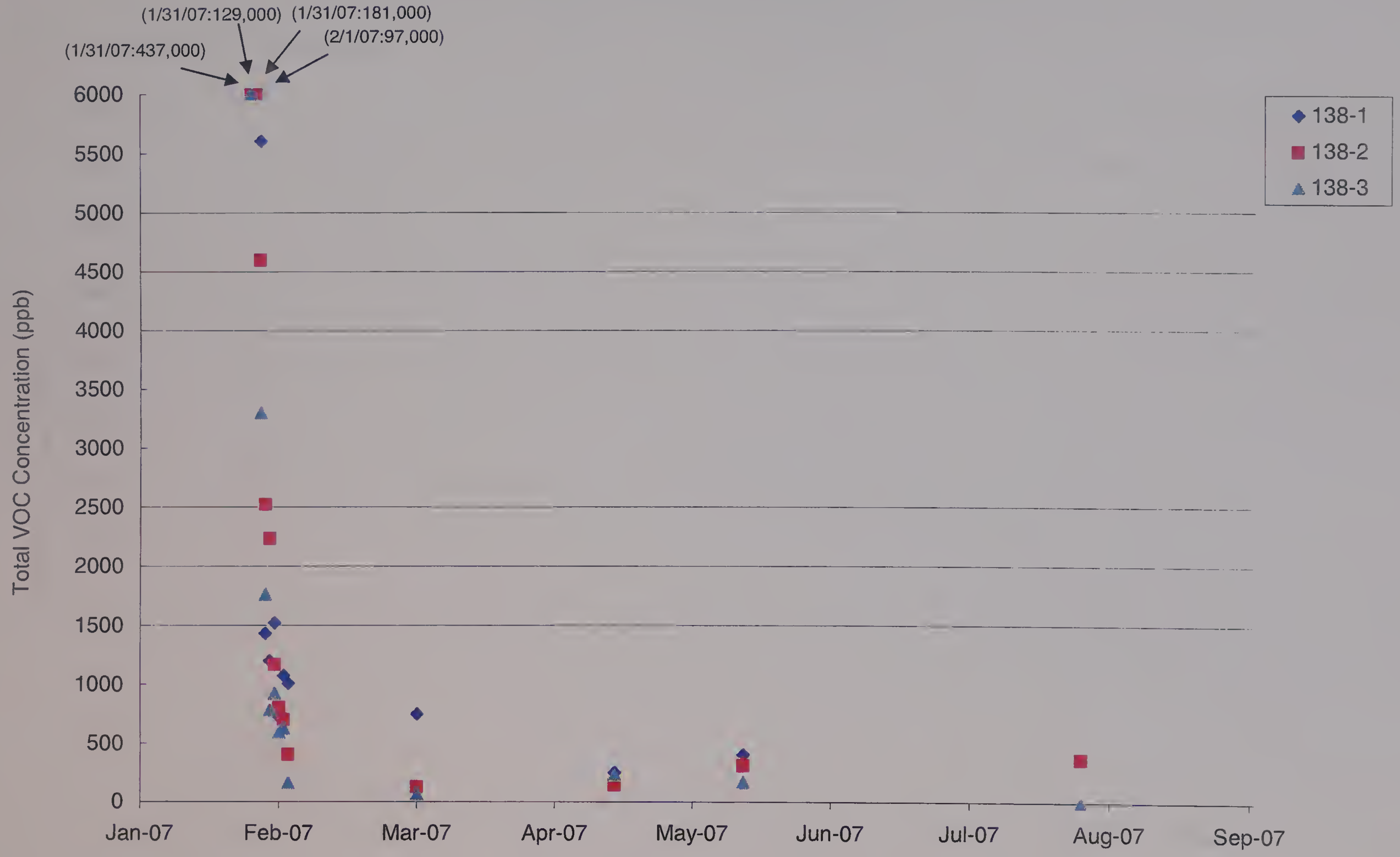


G 5

PID Monitoring Data: January 31, 2007 - August 31, 2007
Total VOC Concentrations by PID at Exterior Monitoring Points - Room 134
Capuano Center
Somerville, MA

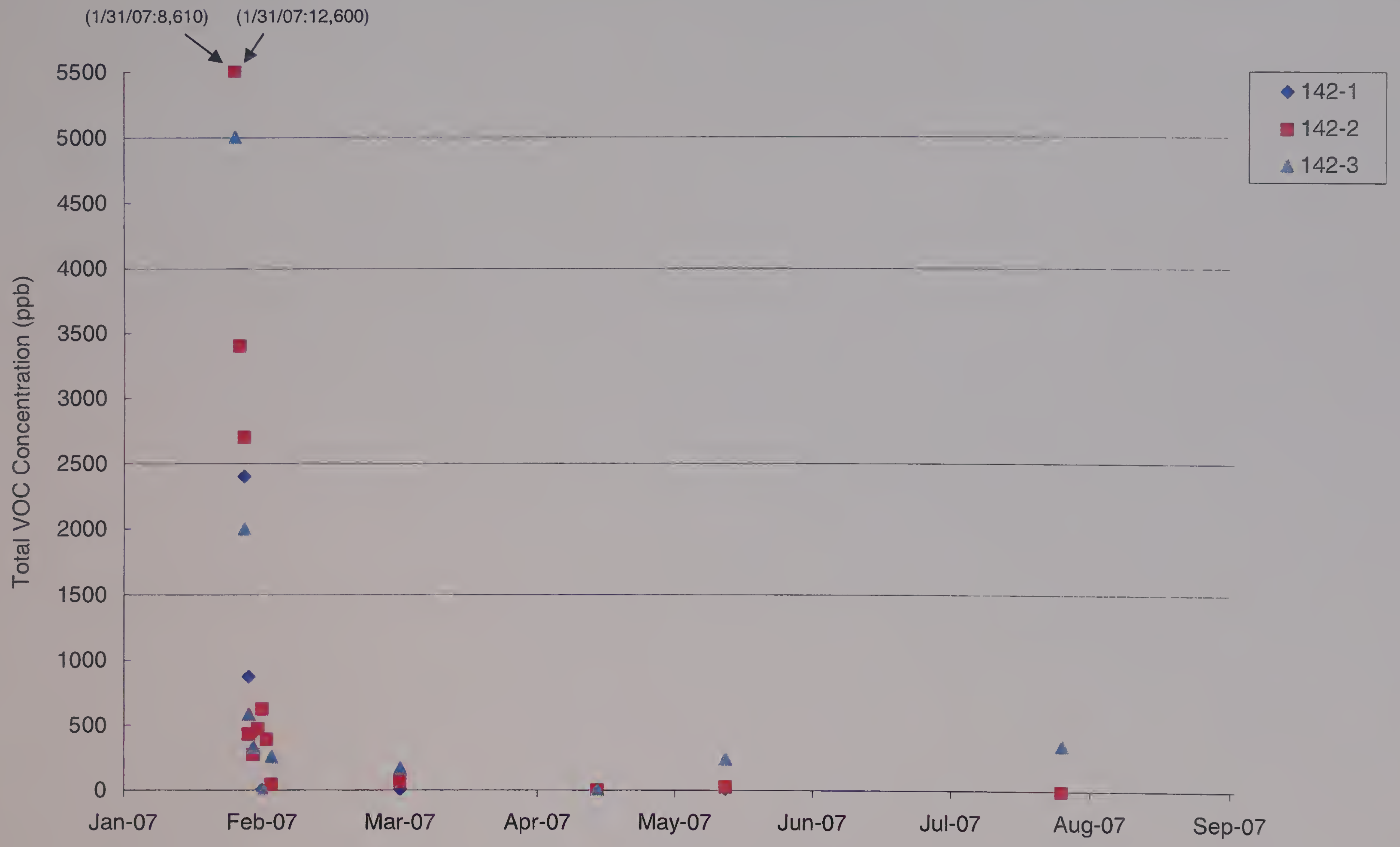


Graph 6
PID Monitoring Data: January 31, 2007 - August 31, 2007
Total VOC Concentrations by PID at Exterior Monitoring Points - Room 138
Capuano Center
Somerville, MA



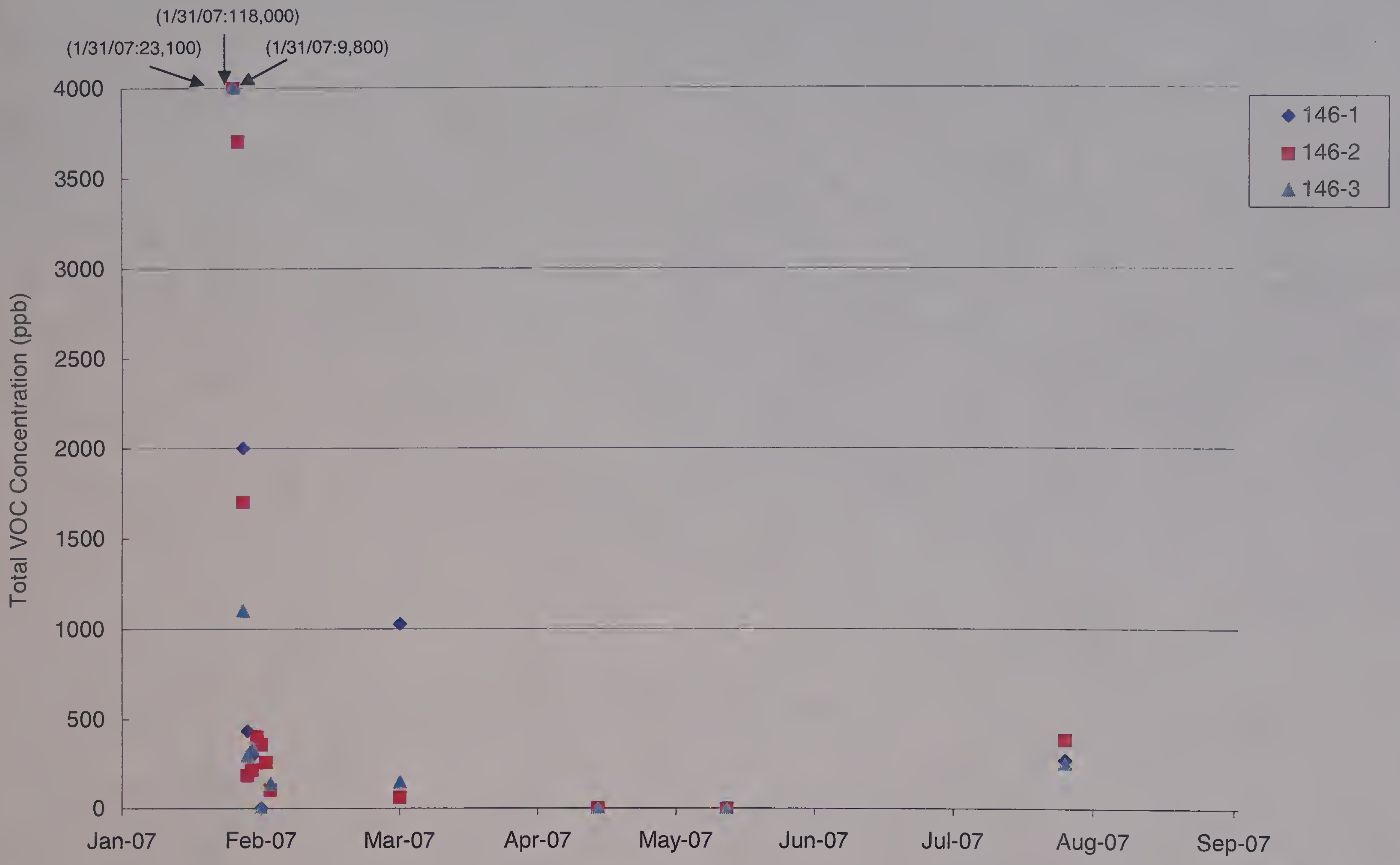
Graph 7

PID Monitoring Data: January 31, 2007 - August 31, 2007
Total VOC Concentrations by PID at Exterior Monitoring Points - Room 142
Capuano Center
Somerville, MA



Graph 8

PID Monitoring Data: January 31, 2007 - August 31, 2007
Total VOC Concentrations by PID at Exterior Monitoring Points - Room 146
Capuano Center
Somerville, MA



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